**Draft Summary of the Environmental Work Group Meeting**
**Oroville Facilities Relicensing (FERC Project No. 2100)**
**January 28, 2004**

The Department of Water Resources (DWR) hosted a meeting for the Environmental Work Group (EWG) on January 28, 2004 in Oroville.

A summary of the discussion, decisions made, and action items is provided below. This summary is not intended to be a transcript, analysis of the meeting, or to indicate agreement or disagreement with any of the items summarized, except where expressly stated. The intent is to present a summary for interested parties who could not attend the meeting. The following are attachments to this summary:

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| Attachment 1 | Meeting Agenda |
| Attachment 2 | Meeting Attendees |
| Attachment 3 | Summary of Potential Sensitivity Analysis, revised 1/26/04 |
| Attachment 4 | Revised Resource Action Tracking Matrix, revised 1/26/04 |
| Attachment 5 | Narrative Reports: EWG 88,68B, 70, 75, 26, 57B, and 5 |
| Attachment 6 | Proposed Changes to Study Plans T1 and T6 |
| Attachment 7 | SP-T2 Draft Final Report: Project Effects on Special Status Wildlife Species |
| Attachment 8 | Presentation on SP-T2 |
| Attachment 9 | SP-T6 Interim Report: Interagency Wildlife Management Coordination and Wildlife Management Plan Development |
| Attachment 10 | SP-F3.1, Task 1A Interim Report: Assessment of Potential Fish Passage Impediments Above Lake Oroville's High Water Mark |
| Attachment 11 | Presentation on SP-F3.1, Task 1A |
| Attachment 12 | SP-F3.1, Task 4B Final Report: Characterization of Cold Water Pool Availability in the Thermalito Afterbay |
| Attachment 13 | Presentation on SP-F3.1, Task 4B |
| Attachment 14 | SP-F3.1, Task 5B Interim Report: Characterization of Fish Habitat in One-Mile Pond |
| Attachment 15 | Presentation on SP-F3.1, Task 5B |
| Attachment 16 | SP-F10, Task 2D Interim Report: Evaluation of Flow Fluctuation Effects on Chinook Salmon Redd Dewatering in the Lower Feather River |
| Attachment 17 | Presentation on SP-F10, Task 2D |
| Attachment 18 | SP-W2 Phase 1 Draft Report: Contaminant Accumulation in Fish, Sediments, and the Aquatic Food Chain |
| Attachment 19 | SP-F15, Task 4 Final Report: Fish Passage Model |

## I. Introduction

Attendees were welcomed to the EWG meeting. Attendees introduced themselves and their affiliations. The desired outcomes of the meeting were discussed as listed on the meeting agenda. The meeting agenda and list of meeting attendees are appended to this summary as Attachments 1 and 2, respectively.

## II. Action Items – December 17, 2003 Environmental Work Group Meeting

A summary of the December 17, 2003 EWG meeting is posted on the relicensing web site. The Facilitator reviewed the status of action items from that meeting as follows:

**Action Item #E118:** Determine goal for a Flow/Temperature Task Force involving the EWG and the EOWG modeling team.

**Status:** Terry Mills (DWR) reported that the Flow/Temperature Task Force met on January 21, 2004 and developed their goal to provide the modeling team with specific targets for temperature and flow. A sub-group is meeting to draft an attributes table and prioritized stressor list for discussion at their next meeting, scheduled for February 9, 2004.

**Action Item #E119:** Determine value in revising the detailed matrix tool.

**Status:** Terry Mills reported that the internal team considered the value of updating the detailed matrix tool and rejected the matrix tool as too complicated and the revision task too time-consuming. The substantive information that would be included is contained in the narrative reports.

**Carryover Items**

**Action Item #E114:** Solicit feedback from Andy Atkinson, DFG on EWG 56, 57A, 68A and 103.

**Status:** Dave Bogener (DWR) reported that Andy had provided his comments on the proposed resource actions.

**Action Item #E117:** Develop and present a process for comments on reports to be submitted by EWG participants to DWR.

**Status:** Terry Mills reported that DWR presented a process to the Plenary Group describing a 30-day comment period initiated at the time a report is presented to the work groups. Wayne Dyok (MWH) suggested that there is some flexibility in the 30-day requirement. The Facilitator noted that the process described in the letter to the Plenary Group would be available on the Project web site as an attachment to the January 27, 2004 meeting summary.

Dave Olson (SWRI) noted an agenda change, replacing SP-F16 with SP-F15 under Agenda Item V. Study Deliverables and Implementation Updates, Reports.

## III. Modeling Update

Art Hinojosa (DWR) reported on the progress of the modeling team. He distributed a Summary of Potential Sensitivity Analysis matrix (Attachment 3) and described the scenarios completed to date. He explained that the team is focusing on Scenarios #1, 2, 10, 12a and 7 and should have most of these completed in time for presentation at the February 11, 2004 Modeling Workshop to be held at the 13th and R Street DWR Training Facility in Sacramento. Art also indicated an additional Modeling Workshop is tentatively scheduled for March 19, 2004.

Eric Theiss (NOAA-Fisheries) asked for an update on the status of Scenario #5, which eliminates the Fish Hatchery temperature requirement as a control for Oroville Dam. Art responded that #5 is currently not scheduled for presentation and Terry Mills added that it is a topic that should be discussed at the Flow/Temperature Task Force meeting.

## IV. Resource Action Discussion

### *Task Force Summaries and Next Meetings*

Brad Cavallo (DWR) reported on the January 16, 2004 Hatchery Task Force meeting. He described proposed resource actions reviewed by the Task Force including identification and tracking recommendations ranging from 100% fin clip, constant fractional marking, to ear bone thermal marking for both hatchery and wild stocks; funding for biologist positions at the Feather River Fish Hatchery; and physical changes to the hatchery to assist with fish handling, water sterilization, holding and marking Spring run Chinook, and to provide a more natural environment for hatchery fish. Anna Kastner (DFG) explained the natural environment could be simulated with substrate, vegetation and even predator introduction to help hatchery stock acclimatize to natural conditions. The next Hatchery Task Force meeting is scheduled for February 2, 2004 at ESO in Sacramento from 9:30 a.m. -12:30 p.m.

Wayne Dyok reported on the January 21st Flow/Temperature Task Force meeting. He described the discussion leading to the goal of providing the modeling team with specific temperatures and operational scenarios to model. He described the development of draft attribute tables and identification of key species' stressors currently underway that will be discussed at the next Task Force meeting scheduled for February 9, 2004 at SWRI's office in Sacramento from 9 a.m. – 3 p.m.

Terry Mills reminded the EWG of additional scheduled upcoming meetings including the technical discussion on Fish Passage scheduled for February 19, 2004 from 9 a.m. to noon at SWRI, and a Task Force meeting scheduled for March 2, 2004 to continue the review of narrative reports and resource action categorization.

***Updated Tracking Matrix and Flow Chart***

Mike Manwaring (MWH) distributed an updated version of the tracking matrix (Attachment 4) and asked the EWG to review and provide comments back to the task forces. He explained the few changes this month and pointed out that the matrix now segregates the Category 4 and 5 resource actions to a separate printout because they are not expected to change again. The proposed resource actions under development by the Hatchery Task Force will be added to the matrix.

Terry Mills reminded the EWG that he provided an update to the Plenary Group at their December meeting and intends to go back to the Plenary Group in March and April with recommended resource actions. He clarified that the recommendation is not for implementation but for further analysis and consideration by the decision makers to move forward in the process.

Brad Cavallo updated the EWG on current Feather River flows, adjusted to accommodate scheduled maintenance repairs at the Thermalito Afterbay Outlet. He noted that currently 1800 cfs is flowing down the Low Flow Channel to maintain required flows in the High Flow Channel downstream of the complex. DWR expects the flows to remain high another 24 hours and then ramp down approximately 50 cfs every 6 hours. The EWG discussed the timing of the maintenance and noted that it a good time from the water balance perspective but is not optimal for biological processes. The EWG identified the need for Operations, maintenance Environmental staff to coordinate their activities and consider identifying critical times to avoid, if possible, for both water supply and biological processes. These criteria could be used in scheduling facility maintenance activities.

***Narrative Reports***

DWR distributed narrative reports covering EWG 88, 68B, 70, 75, 26, 57B, and 5 (Attachment 5). Brad Cavallo described EWG 88, a proposal to increase flows in the LFC to increase spawning habitat and suggested the focus should be expanded to include other life stages. The EWG discussed the preliminary analysis of PHABSIM and optimal flows for spawning and how channel modifications might change the habitat suitability. The report described the flow regime as a significant component to an overall strategy for habitat improvement and suggested a comprehensive approach to habitat management using tools such as PHABSIM and Fluvial 12. Terry Mills added that the report on SP-F16 is waiting for a narrative from the primary author describing the rationale for the selection of transects. After review by DWR, the report will be distributed to the EWG.

Carin Loy (MWH) described EWG-68B, a proposal to enhance riparian vegetation within the Oroville Reservoir fluctuation zone. The report indicates slope and soil type limit substantial

vegetation in the fluctuation zone except in areas where it has already emerged or been planted. There is some potential to expand plantings in those areas and the EWG discussed potential benefits to terrestrial species. No special status species are expected to benefit, nor would complexity typical of a natural riparian system be expected because the native species are not adapted to the fluctuation zone hydrologic regime. The relatively small cost is due to the small size contemplated for test plots. Gail Kuenster (DWR) added that some plantings might be considered for aesthetic purposes and indicated they had identified these areas but could not quantify the amount of shoreline involved using the existing GIS database because the mapping ends at 900 feet elevation and the fluctuation zone lies below that level.

Michael Pierce (Butte County) suggested that the more important aesthetic view is the face of the dam and advocated including that in the native plantings within the Project area. The EWG agreed that EWG-68B should remain a Category 2 until further information is developed identifying suggested planting locations and probability of success, at which time it will be re-categorized as a 1.

The EWG discussed EWG-70 related to the control and/or elimination of noxious plants in the LFC. Gail Kuenster described the plant species and considerations for control including costs for both initial and re-occurring activities, permitting requirements and environmental regulations related to chemical use in salmon-bearing streams. Andy Atkinson (DFG) suggested an approach targeted at specific species and a plan to address eradication vs. control because this is a costly resource action. Gail explained the need for development of a long-term management plan and Wayne Dyok offered that FERC would expect DWR to develop a plan for inclusion in the new license. Dave Bogener (DWR) noted the need to coordinate with the Oroville Field Division and Gail suggested coordination with the County Agricultural Commission which has funding that may be used toward targeted species.

Discussion on EWG-75 and EWG-26 were postponed until the February EWG meeting because Eric See (DWR) was responding to an incident and unable to attend the meeting.

Dave Bogener reviewed EWG-57B, a proposal to enhance upland cover and forage for upland game birds and waterfowl. He explained that this proposal is to continue an existing program in cooperation with the Central Valley Habitat Joint Venture. The funding source for the Oroville Wildlife Area (OWA) work has been the OWA base budget and a one-time grant from the California Waterfowl Association. The program is considered biologically successful and use records indicate the area provides hundreds of people free hunting access. Dave noted the program could be included in the upland vegetation management plan.

The EWG discussed EWG-5, a proposal to modify Sunset Pumps and/or Shanghai Bench to facilitate passage of sturgeon and shad. Eric Theiss offered to share information on sturgeon-friendly passage he collected at a recent workshop on fish passage and noted how feasible he believes the modification of Shanghai Bench would be. The EWG discussed if FERC could make a determination to structurally modify something that is not part of the Project facilities or within the Project boundary. Wayne Dyok offered that FERC will not order someone else to do something but could mandate changed flows from the licensee.

The EWG discussed what appear to have been significant modification by the Irrigation District owner to the Sunset Pumps between DWR field visits and questioned the permitting process for such action. Rich DeHaven (FWS), Eric Theiss (NOAA-Fisheries), and Andy Atkinson (DFG) agreed to investigate their agency's permitting activities for the recent modifications to the facility. Laurie Hatton (SWRCB) will follow-up with the Regional Board regarding a 401 permit. The resource action remains a Category 2.

## V. Study Deliverables and Implementation Updates

***Proposed Study Changes***

Dave Bogener distributed a handout describing proposed changes to SP-T1 and SP-T6 (Attachment 6) and the EWG agreed to the change, which will consolidate results of other wildlife study plans within the SP-T6 report instead of SP-T1 and to focus SP-T1 on evaluation of the effects of project related operations and maintenance activities.

***Reports***

*SP-T2*

Dave Bogener distributed SP-T2 Draft Final Report: Project Effects on Special Status Wildlife Species (Attachment 7) and provided a presentation (Attachment 8). The EWG discussed the results and implications for future recreation development within designated red-legged frog habitat and the need for further consultation with FWS under either Section 7 or 10. Terry Mills asked for comments on the report, focused on factual errors or study plan inconsistencies in 30 days or by February 28, 2004.

*SP-T6*

Dave Bogener distributed SP-T6 Interim Report: Interagency Wildlife Management Coordination and Wildlife Management Plan Development (Attachment 9). He reviewed the status of Study Plan Tasks 1-6 and identified several that have been transferred to the Land Use, Land Management and Aesthetics Work Group (LUWG). The Facilitator noted that the LUWG had not discussed this effort at their January WG meeting and suggested following up with them to make sure these tasks get completed.

*SP-F3.1, Task 1A*

Dave Olson (SWRI) distributed SP-F3.1, Task 1A Interim Report: Assessment of Potential Fish Passage Impediments Above Lake Oroville's High Water Mark (Attachment 10) and provided a presentation (Attachment 11). The report evaluated four major and ten minor tributaries to Oroville Reservoir, surveyed for features with potential to bar adult salmonid fish passage during low and high flow conditions. The methodology considers differences in leaping ability between steelhead and salmon.

*SP-F3.1, Task 4B*

Dave Olson distributed SP-F3.1, Task 4B Final Report: Characterization of Cold Water Pool Availability in the Thermalito Afterbay (Attachment 12) and provided a presentation (Attachment 13). The report states that based on analysis of available data, water temperatures for both a put-and-grow and a put-and-take salmonid fishery management are suitable at the locations sampled. He clarified that there is horizontal stratification but not vertical within the Afterbay. The Afterbay can cool down water temperatures in the winter due to residence time and exposure to ambient air temperatures so water exiting the Afterbay is colder then that entering.

*SP-F3.1, Task 5B*

Adrian Pitts (SWRI) distributed SP-F3.1, Task 5B Interim Report: Characterization of Fish Habitat in One-Mile Pond (Attachment 14) and provided a presentation (Attachment 15). The warmwater habitat was analyzed and based on water quality tolerance ranges and habitat preferences, it is likely that suitable habitat exists within portions of the pond for most native and non-native warmwater species identified as having the potential to occur within the pond.

*SP-F10, Task 2D*
Paul Bratovich (SWRI) distributed SP-F10, Task 2D Interim Report: Evaluation of Flow Fluctuation Effects on Chinook Salmon Redd Dewatering in the Lower Feather River (Attachment 16) and provided a presentation (Attachment 17). The report provides information regarding the percentage of Chinook salmon redds potentially affected under current operations and could be used to evaluate future potential Resource Actions involving flow changes and their potential effects on redd dewatering. An estimated total of 1.1 percent of all Chinook salmon redds constructed in the lower Feather River would have been subjected to dewatering during the 2002/2003 spawning and incubating season. Paul noted that the study evaluated exposure to reduction in water levels and did not represent desiccation and death. He added that the low percentage of spawning early arrivals is likely connected to water temperatures.

*SP-W2, Phase 1*
Jerry Boles (DWR) distributed SP-W2 Phase 1 Draft Report: Contaminant Accumulation in Fish, Sediments, and the Aquatic Food Chain (Attachment 18). The EWG discussed the need for the Task Force to re-convene and identify additional sampling needs for Phase 2. Jerry will schedule a meeting time and date with the key participants and report the Task Force recommendations back to the EWG. The EWG discussed the high levels of mercury and the advisories contained in State fishing regulations regarding consumption levels. Jerry noted it is not unexpected, given the historic mining activities that occurred in the Sierras, to see elevated levels of mercury in reservoir fish.

*SP-F15, Task 4*
Dave Olson distributed SP-F15, Task 4 Final Report: Fish Passage Model (Attachment 19). He explained that the object of the model is to provide a tool to evaluate the feasibility of a potential fish passage program for the Oroville Project. He reminded the EWG that a technical task force meeting is scheduled for February 19, 2004 and this presentation is to introduce the model that will be discussed at that time. The EWG reviewed inputs to the model and Eric Theiss suggested the input values were incorrect and expected efficiencies too low. Dave reminded the EWG that the input values could be changed and Paul Bratovich noted that each default value has supporting rationale so any suggested changes should be likewise supported. The EWG discussed the inputs that are driving the model and agreed to discuss them further at the Task Force meeting.

## VI. Next Steps

The participants agreed that the next EWG meeting would focus primarily on the review of narrative reports and study reports. Terry Mills reminded the EWG that he needs to go back to the Plenary Group in March with recommendations and he is likely going to present recommendations from the Category 1 and 2 RAs. This will be discussed further at the next EWG meeting. The next EWG meeting is:

Date: February 25, 2004
Time: 9:00 a.m. – 4:00 p.m.
Location: Oroville Field Division

**Action Items**
The following action items identified by the EWG includes a description of the action, the participant responsible for the action, and due date.

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| **Action Item #E120:** | Add Hatchery Task Force Resource Actions to the matrix. |
| **Responsible:** | DWR/Consulting Team |
| **Due Date:** | February 25, 2004 |

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| **Action Item #E121:** | Report on individual agency permitting activities for the recent modifications to the Sunset Pumps facility. |
| **Responsible:** | FWS, NOAA-Fisheries, DFG, Regional Board |
| **Due Date:** | February 25, 2004 |

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| **Action Item #E122:** | Follow-up on transfer of tasks from SP-T6 to LUWG. |
| **Responsible:** | Facilitator/DWR |
| **Due Date:** | February 25, 2004 |